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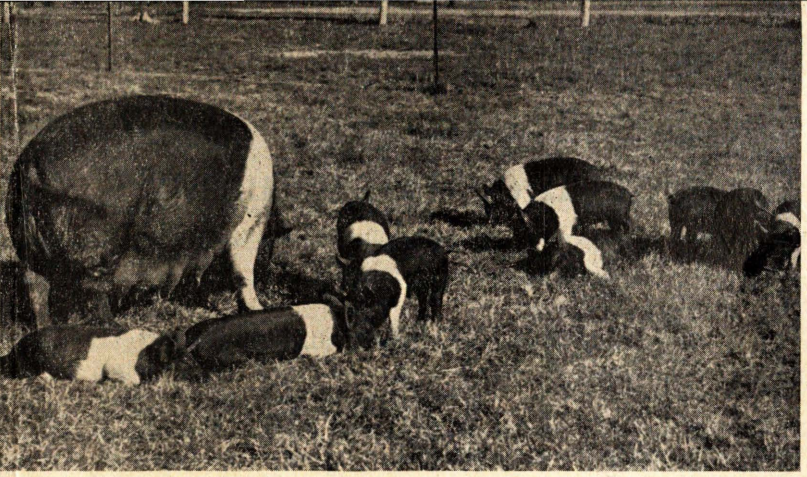
Swine Feeding and Management Throughout the Year

LaVerne Kortan

James O'Connell



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Good Pastures, Early in the Season, for Cheaper, Faster Gains

Swine
Feeding and Management
Throughout The Year

AGRICULTURAL EXTENSION SERVICE
South Dakota State College U. S. Department of Agriculture Cooperating

Swine Feeding and Management

LaVerne Kortan and James O'Connell
Extension Animal Husbandmen, SDSC

Breeding Stock

Allow gilts to run on pasture to provide plenty of exercise.

Two or three weeks before breeding season begins, flush animals by using a high protein ration.

Feed boar according to size. When in service, feed the boar more liberally. Do not try to breed more than two or, at the most, three sows per day to him. When not in service, feed 4-6 pounds daily, and when in service, 6-8 pounds per day. Adequate exercise is necessary.

Gestation period—Provide balanced ration. The last ⅓ of gestation period is most important—have sows receive plenty of exercise daily; prevent icy paths. Falls may result in loss of litter. **Farrowing pen** should be ready: scrubbed out with hot lye water (1 lb. of lye to 30 gallons of hot water), disinfected, and bedded with a conservative amount of bedding. Five to seven days before farrowing, place them in the pen to become accustomed to surroundings. Reduce the amount of feed slightly, but feed enough so that the sow is not restless. Electric brooder is essential in cold weather.

Farrowing—feed small amount of feed on day of farrowing; double handful of bran or ground oats is excellent. Provide ample supply of luke-warm, fresh water. After the first day, gradually increase the amount of feed until she is back on full feed in 10-14 days.

After the pigs get off to a good start, follow the 2-4-6-8-10 system. What do we mean? Well,—at **two weeks,** castrate the male pigs produced for market. At **four weeks,** start creep feeding. At **six weeks,** vaccinate for hog cholera. At **eight weeks,** wean by taking the sows away from the little pigs. And at ten **weeks,** if necessary, treat for internal and external parasites.

General Housing and Equipment

Shade in pasture—allow 8 square feet per pig—pole framework covered with brush, straw or other material. Posts should clear ground by 5 feet to let air circulate.

Farrowing pen 45 to 64 square feet. (6′ x 7½′, 6′ x 8′, or 8′ x 8′.)

Shed or barn space in the winter 12-15 square feet per gilt. Larger amounts for larger sows.

General Feeding Suggestions

Provide plenty of clean, fresh water.

Salt should be fed free choice in addition to mineral at all times. If salt is added to combination of grain and protein supplement instead of free choice, use not over ¼ pound to each 100 pounds of feed. If added only to protein supplements, 2 to 3 pounds of salt to each 100 pounds of supplement is sufficient.

Mineral should be available free choice at all times. Simple effective mixture consists of:

Steamed bone meal	**40 lbs.**
Ground limestone	**40 lbs.**
Trace mineral, salt	**20 lbs.**

Following **levels of protein** are recommended in rations for various classes of swine:

Market Stock

Weight	Protein in Ration
50 lbs.	18%
100 lbs.	16%
150 lbs.	14%
200 lbs.	13%
250 lbs.	12%

Breeding Stock

Class	Protein in Ration
Gestation Gilts—Young Boars	15%
Gestation Sows—Mature Boars	12%
Lactation—Sows and Gilts	15%

Grinding grains for swine. Estimated increases in feeding value which can be expected from grinding or rolling grains for swine:

Grain	If Hand Fed	If Self Fed
Corn	5%*	Very little increase
Oats	25%	25%
Barley	20%	15%
Sorghum grains	15%	3%*
Wheat	20%	5%*

It usually pays to grind rye for swine.

**Usually will not pay for additional cost of grinding.*

Pastures: Use of good pasture for swine will result in considerably cheaper gains. It has been estimated that an acre of good pasture will save from 500 to 800 pounds of good protein supplement. Pasture fed hogs require about ½ as much protein supplement as hogs fed in dry lot. One acre of alfalfa will usually be sufficient for 15 to 25 growing-fattening hogs or half this number of bred sows. Kinds of pasture that may be used are Alfalfa, Ladino, Red Clover, Brome Grass, Rape, Sudan Grass, Rye.

Antibiotics. Even though many swine producers can expect increased gains from feeding antibiotics (especially in dry lot), it should be emphasized that these compounds will not take the place of proper nutrition and sanitation.

Any statement regarding the amounts of antibiotics to be fed are only estimates at present. It should be expected that the optimum levels of feeding the different antibiotics will vary under different feeding conditions and systems of management. A tentative guide is to feed the equivalent of 10 grams of antibiotic per ton of mixed feed for pigs between weaning and 125 pounds. For pigs from 125 pounds to market weight, a more economical level is probably nearer 5 grams of antibiotic per ton of mixed feed. If mixed in smaller amounts, 5 milligrams per pound of total ration may be used. It must be remembered that special equipment will be needed to properly mix such a small amount of antibiotics into a ton of feed.

For suckling pigs, antibiotic level in relation to grain and supplement should probably be increased, since these feeds are only part of total feed consumed. For creep rations, the level of antibiotics probably should be increased to 20 grams per ton of grain and supplement.

Table 1. Types of Protein Supplements That May Be Hand-Fed During Gestation.

Approximate Protein Content	A 35%	B 35%	C 33%	D 34%	E 36%	F 37%	G 36%
	Weight—Pounds						
Soybean meal	300	300	300	200	300	400	300
Linseed meal	----	----	----	100	----	----	100
Tankage	300	200	----	200	300	----	----
Meat scraps	----	----	300	----	----	----	----
Fish meal	----	100	----	100	----	300	300
Distillers' solubles (dried)	----	----	----	----	100	----	----
Alfalfa meal (sun cured)	400	400	400	400	300	300	300
Ground limestone	20	20	10	20	35	40	40
Steamed bone meal	10	15	----	15	----	20	20
Salt	20	20	20	20	20	20	20
Total	**1050**	**1055**	**1030**	**1055**	**1055**	**1080**	**1080**
	Ratios of above Supplements to Grain to Give 15% Protein						
Corn*	75	75	73	74	76	77	76
Supplement	25	25	27	26	24	23	24
⅓ oats and ⅔ corn	79	79	77	78	80	81	80
Supplement	21	21	23	22	20	19	20

**One pound of dry ear corn is equivalent to approximately 0.8 lb. of shelled corn.*

Gilts will need enough feed to cover both growth and developing litter requirements. In general, gilts should be expected to gain 100 to 125 pounds during gestation. Sows that are in good condition when bred should gain 75 to 100 pounds.

The amount of feed required for optimum gains depends on the bulkiness of the

ration. As a guide, it may be expected that mature sows will require approximately 1.2 pounds of feed per 100 pounds body weight daily during the first two-thirds of the gestation period. During the last one-third of pregnancy, approximately 1.4 pounds daily per 100 pounds of body weight should be fed. Bred gilts will require approximately 1.8 to 2.0 pounds of supplement and grain daily per 100 pounds body weight. On this basis, a 350 pound gilt will require from 6.3 to 7.0 pounds feed daily.

Table 2. Types of Rations That May Be Self-Fed During Gestation.

	Bred Gilts						Mature Bred Sows		
	A	B	C	D	E	F	A	B	C
	weight—pounds						weight—pounds		
Ground corn	400	320	360	360	510	———	360	310	460
Ground sorghum grain	———	———	———	———	———	430	———	———	———
Ground oats	250	300	250	250	———	200	300	300	100
Alfalfa meal (sun cured)	250	300	300	300	400	300	300	350	400
Tankage	50	40	40	———	40	40	40	40	40
Meat scraps	———	———	———	50	———	———	———	———	———
Soybean meal	50	40	50	40	50	30	———	———	———
Steamed bone meal	5	5	5	———	10	5	10	10	10
Salt	5	5	5	5	5	5	5	5	5
Total	**1010**	**1010**	**1010**	**1005**	**1015**	**1010**	**1015**	**1015**	**1015**

Lactation Rations

By time pigs are 10 days or two weeks old, the sow should be self-fed a ration designed for maximum milk production. For sow suckling litters on good pasture, alfalfa meal may be omitted from ration shown in Table 3 and from protein supplement fed free choice with grain.

Table 3. Types of Rations for Self-Feeding Sows and Gilts During Lactation.

	A	B	C	D	E	F	G	H*
				weight—pounds				
Ground corn	510	630	610	———	600	580	570	690
Ground sorghum grain	———	———	———	580	———	———	———	———
Ground oats	250	———	150	200	100	100	100	———
Wheat middlings	———	150	———	———	———	———	100	———
Alfalfa meal (sun cured)	———	———	100	———	150	150	100	150
Alfalfa meal (dehydrated)	100	100	———	100	———	———	———	———
Tankage	70	80	50	———	70	———	50	70
Meat scraps	———	———	———	60	———	70	———	———
Fish meal	———	———	40	———	———	———	40	———
Soybean meal	70	40	50	60	80	100	40	90
Ground limestone†	5	5	5	5	5	———	5	5
Salt	5	5	5	5	5	5	5	5
Total	**1010**	**1010**	**1010**	**1010**	**1010**	**1005**	**1010**	**1010**

**This type of ration is best suited to sows and gilts during the later part of the lactation period because of its lower fiber content.*

†Ground limestone is added as insurance against the heavy drains of calcium during lactation. The additions of limestone may not be necessary, because the feeds furnish as much calcium as is usually recommended for lactation rations.

Rations for Suckling Pigs

Pigs should be allowed access to a creep ration by the time they are two to three weeks old. The milk production of the sow declines after the third week, and pigs should have a maximum opportunity to consume feed.

During this period, palatability of the

feed is exceedingly important. Numerous tests have shown that young pigs prefer whole corn (if corn is not too hard) or coarsely cracked corn instead of finely-ground grains. Pelleted feeds are more palatable to young pigs than finely-ground grains and supplements. Rolled or hulled oats are very palatable to young pigs. Several procedures may be followed in creep feeding. A common practice is to feed shelled or cracked corn free-choice with a protein supplement. Other cereal grains and their by-products may be mixed with the cracked corn and fed free-choice or mixed with the protein supplement. They also may have access to the individual grains and protein supplement.

Several examples of protein supplements for young pigs are shown in Table 4. If the supplements are mixed with grain, there usually will not be much, if any, advantage from including more than 16% protein in the mixed creep ration while the pigs are nursing the sow. After weaning, the protein level should be increased to 18% for maximum gains.

Table 4. Types of Protein Supplements for Pigs up to 50 or 75 Pounds.

Approximate Protein Content*	A 39%	B 37%	C 41%	D 34%	E 38%	F 40%	G 40%	H 43%	I 40%
	weight—pounds								
Soybean meal	400	400	450	250	350	350	350	350	300
Tankage	300	———	300	200	300	300	300	200	200
Meat scraps	———	300	———	———	———	———	———	———	———
Fish meal	———	———	———	———	———	———	———	200	100
Alfalfa meal (sun cured)	300	300	———	250	250	250	250	250	———
Alfalfa meal (dehydrated)	———	———	250	———	———	———	———	———	200
Distillers' solubles (dried)	———	———	———	300	———	———	———	———	100
Whey (dried)	———	———	———	———	100	———	———	———	———
Skimmilk (dried)	———	———	———	———	———	100	———	———	———
Buttermilk (dried)	———	———	———	———	———	———	100	———	100
Ground limestone	———	———	———	15	———	———	———	———	———
Salt	15	15	15	15	15	15	15	15	15
Total	**1015**	**1015**	**1015**	**1030**	**1015**	**1015**	**1015**	**1015**	**1015**
	Ratios of above Supplements to Grain Mixtures to Give Mixed Rations Containing 16% Protein for Suckling Pigs.								
½ cracked corn and ½ rolled or hulled oats; or ½ cracked corn, ¼ rolled or hulled oats and ¼ wheat middlings	86	85	87	83	85	86	86	88	86
Supplement	14	15	13	17	15	14	14	12	14

**See Table 6 for ratios of supplements to corn if mixed rations are fed which contain 16% protein before weaning and 18% protein after weaning.*

Rations for Pigs After Weaning

The protein supplement shown in Table 4 may be fed free choice with shelled corn to pigs after weaning. Some of these supplements may be more expensive than necessary for pigs weighing over 75 pounds. Many of the supplements shown in Table 5 are generally less expensive and usually will produce just as satisfactory results for hogs beyond this weight.

Table 5. Types of Protein Supplements That May Me Self-fed to Growing-Fattening Swine in Dry Lot.

Approximate Protein Content	A 38%	B 36%	C 40%	D 40%	E 39%	F 40%	G 37%	H 38%	I 34%	J 38%
						weight—pounds				
Soybean meal	400	400	450	350	350	350	300	300	250	500
Cottonseed meal	.....	.....	.....	100	.....	.....	.....	100	.....	.....
Linseed meal	.....	.....	.....	.....	100	.....	100	.....	.....	.....
Peanut meal	.....	.....	.....	.....	.....	100	.....	.....	.....	.....
Tankage	300	.....	300	200	200	200	200	300	250	250
Meat scraps	.....	300	.....	.....	.....	.....	.....	.....	.....	.....
Fish meal	.....	.....	.....	100	100	100	100	.....	.....	.....
Distillers' solubles (dried)	.....	.....	.....	.....	.....	.....	.....	.....	250	.....
Alfalfa meal (dehydrated)	.....	.....	250	250	250	250	.....	.....	.....	250
Alfalfa meal (sun cured)	300	300	.....	.....	.....	.....	300	300	250	.....
Ground limestone	20	10	20	25	25	25	25	25	30	25
Steamed bone meal	10	....	5	10	10	10	10	.....	10	15
Salt	20	20	20	20	20	20	20	20	20	20
Total	**1050**	**1030**	**1045**	**1055**	**1055**	**1055**	**1055**	**1045**	**1060**	**1060**

There is considerable overlapping in the supplements shown in Tables 4 and 5. The first three supplements in each table are similar except for mineral content. Calcium and phosphorus levels of supplements A, B, and C, shown in Table 4 may be low for larger hogs, since the supplements will make up less of the total ration. The mineral additions to the supplements shown in Table 5 are made to compensate for lower protein intakes beyond 75 pounds.

Table 6 shows the ratios of protein supplements to corn needed to balance mixed rations. For example, approximately 30 pounds of a 40% supplement and 70 pounds of corn are needed to give a mixed ration containing 18% protein. Likewise, 26 pounds of a 34% supplement and 74 pounds of corn will give a mixed ration containing 15% protein.

For hogs on good pasture, the alfalfa can be omitted from the supplements shown in Table 5.

Table 6. Ratio of Corn to Protein Supplements Needed to Obtain the Desired Level of Protein in a Ration.

Desired percent of Protein in Ration		Percent Protein in Supplement 32	36	40	44	48	52
18	corn*	60	65	70	73	76	78
	supp.	40	35	30	27	24	22
17	corn	64	69	73	76	78	80
	supp.	36	31	27	24	22	20
16	corn	68	73	76	79	81	83
	supp.	32	27	24	21	19	17
15	corn	72	76	79	82	84	85
	supp.	28	24	21	18	16	15
14	corn	77	80	83	85	86	87
	supp.	23	20	17	15	14	13
13	corn	81	84	86	87	89	90
	supp.	19	16	14	13	11	10
12	corn	85	87	89	90	91	92
	supp.	15	13	11	10	9	8

**The values apply to corn containing 8.5% protein.*

Feed Required in Terms of Gains

Since feed costs may account for as much as 80% of the total cost of producing swine for market, it is interesting to note how these costs are distributed over the growth period.

Table No. 7. Feed Required to Produce a 225 lb. Market Hog (on Good Alfalfa Pasture)*

Stage	Grain (lbs.)	Protein supplement (lbs.)	Minerals (lbs.)	Total feed (lbs.)	Feed per 100 lbs. gain
Sow (gestation)	754	40	3	797	
Sow and litter	763	85	7	854	
Total	**1517**	**125**	**10**	**1651**	
Per weaned pig (6.5 pigs per litter)†	233	19	2	254	
30 to 75 lbs.	114	20	1	135	300
75 to 150 lbs.	220	26	1	247	329
150 to 225 lbs.	264	24	1	289	385§
Total	**831‡**	**89**	**5**	**925**	

**Feed requirements on drylot are about 15% more than on pasture.*

†*Calculated on average producer.*

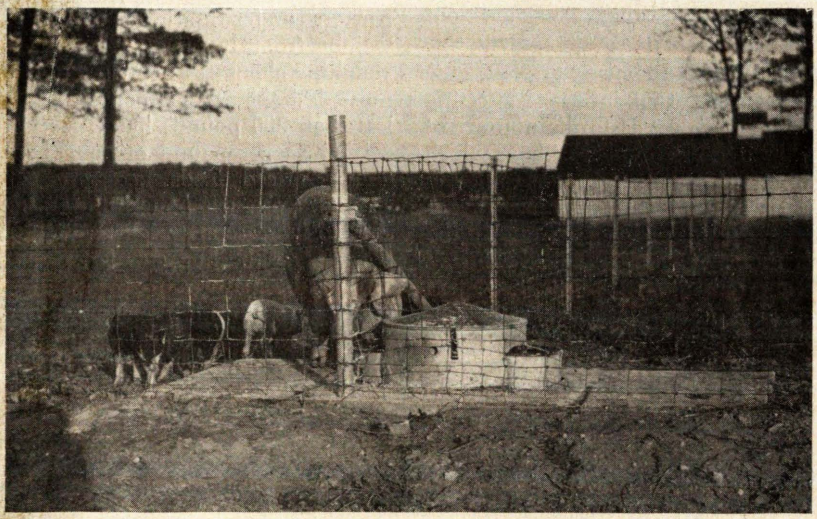
‡*Equivalent to 14.8 bu. of corn. (Requir. per cwt. gain = 6.56 bu. corn, 39.5 lbs. suppl. and 2.2 lbs. minerals.)*

§*Remember—Feed efficiency drops more rapidly after the market hog reaches 240 lbs.*

Reference—Purdue Univ.—1942

How much feed does it require to produce a 225 pound market hog? From Table No. 7 we can see that it takes nearly half a ton of feed to produce a 225 pound market hog on good alfalfa pasture. This table will also be very helpful in calculating the feed requirements for hog production.

Clean Water Supply is Important



Clean water is a "must" for good hog production .An automatic waterer makes it easy. A 100-pound pig in dry lot needs 1¼ gallons of water a day.

Selling Hogs Profitably

Studying the Market Pays Off

The successful hog producer makes a study of market conditions as well as problems of production. The producer has felt for entirely too long a period that his interest ceased with the production of hogs to a marketable weight. The ultimate success of the enterprise will depend on marketing methods. By a little study of the major phases of marketing the producer can adjust his production and marketing technique to meet some of the problems which seem to detract from the profits of his business.

When to Market Hogs. September and April are generally recognized as the two months of average higher hog prices in the year. Hog prices are high in September because most hogs are grassed through the summer and are fed off on the new grain and corn crop and are not yet ready for market. Accordingly, there is a shortage in hogs on the September market, with a resulting higher price. April prices are high because most hogs have been sold earlier in the year, and fall farrowings, wintered on limited rations, are not ready for market. It should be understood that these conditions are average and do not always apply to specific years.

The most important influence affecting the farmer's decision as to the number of sows to breed or the number of hogs which can be profitably marketed seems to be the relation between feed prices, especially of corn and the prices of live hogs during the months immediately preceding the breeding season. This relationship is known as the "corn-hog ratio," and means the number of bushels of corn required to equal in value 100 pounds of live market hogs. A corn-hog ratio of 12, for example, means that the prices are such that 12 bushels of corn is equal in value to 100 pounds of hogs.

A high or favorable corn-hog ratio, above 12.6, means cheap corn and high-priced hogs and a profit to the feeder. A low or unfavorable ratio means high-priced corn and low market prices for hogs and a loss.

The effect of a low ratio is to cause reduction in the number of sows bred during the subsequent breeding season, while a high ratio tends to increase the number bred. Generally, an upturn in the ratio is accompanied by a reduction in total hog slaughter. The corn-hog cycle and hog-production cycle tend to move in opposite directions and each cycle is generally about five years duration. When hog prices are high relative to corn, production is stimulated and the volume of receipts reaching market one to two years later increases; an unfavorable ratio in any year discourages production and tends consequently to reduce market supplies one to two years later.

225 lb. Hog Usually Best Price

Weight to Market Hogs. South Dakota packers prefer market hogs ranging in weight from 180 to 240 pounds. A hog weighing about 225 pounds is probably the most desirable. Hogs marketed at weights less than 200 pounds have, in most cases, cost more per pound of gain, because of higher priced feeds necessary for early growth. Costs per pound of gain will also tend to increase at weights much over 200 pounds. As the hog gets larger, and especially as he matures, it requires more feed to put on each additional pound of gain. Produce what the market wants and little difficulty will be experienced in finding a good market.

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George I. Gilbertson, Director.